

CLAIMS

1. In a multi-channel video transmission system wherein channel video segments are operated on by corresponding channel video encoders (709) to encode said video segments into pluralities of frames organized into groups having defined frame patterns, an apparatus to effect a temporal staggering of corresponding ones of said frame groups among said channels comprising:

a frame counter (701) to synchronize reset signals associated with said corresponding channel video encoders (709); and

means for providing a timing offset to ones of said channel video encoders corresponding to a selected frame stagger for given ones of said channels.

2. The apparatus of claim 1 further comprising:

a plurality of registers (703), ones of said registers being loaded with frame offset values corresponding to said selected frame stagger for an associated channel.

3. The apparatus of claim 2 further comprising:

a plurality of comparators (705), ones of said comparators being functionally associated with ones of said video encoders (709), said comparators being operative to receive as inputs an output of associated registers (703) and of a frame rate counter (701), and to provide a timing signal as an output corresponding to said selected frame stagger for an associated channel.

4. The apparatus of claim 3 further comprising:

a plurality of gates (707) adapted to receive as inputs an encoder reset signal level and an output of ones of said comparators (705) and to provide as an output a reset signal for an associated encoder, wherein ones of said encoders are reset at a timing point corresponding to the selected frame stagger for given encoders.

5. In a video transmission system in which video segments are encoded into a plurality of frame types, a method for arranging frame transmission alignment among a plurality of channels concurrently transmitted via a common transmission medium, comprising:

identifying a specified frame type in each of said plurality of channels; and

causing ones of said specified frame type to be arranged so as to avoid temporal alignment with other ones of said specified frame type in corresponding other ones of said plurality of channels.

5 6. The method of claim 5 wherein said ones of said specified frame type and other ones of said specified frame type are temporally displaced, relative to one another.

 7. The method of claim 5 wherein said specified frame type in successive ones of said plurality of channels are displaced by one frame position relative to a location of said
10 frame type in a preceding channel.

 8. The method of claim 5 wherein said video segments include a fixed number of frame positions and said fixed number of frame positions is an integer multiple of the number of said plurality of channels.
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 9. The method of claim 5 wherein each of said plurality of channels is synchronized to a common frame rate and phase.

 10. The method of claim 5 wherein said plurality of frame types include a high
20 priority frame type and a low priority frame type.

 11. The method of claim 5 wherein said plurality of frame types include at least one intermediate priority frame type.

25 12. The method of claim 11 wherein said video segments are encoded using an MPEG coding methodology and further wherein said high, intermediate and low priority frame types correspond respectively to MPEG Intra-coded, Predictive, and Bi-directionally Predictive frames.

30 13. The method of claim 10 wherein ones of said low priority frame type are optionally dropped to reduce required transmission bandwidth.

 14. The method of claim 5 wherein said video segments are encoded using an MPEG coding methodology and correspond to an MPEG Group of Pictures.